

DETAILED ACTION

Response to Arguments

1. Applicant's arguments (7/9/08 Response: page 13, lines 9-13; page 15, line 8 - page 16, line 20; page 16, lines 26-28) with respect to the rejection of claims 7-10, 18-21, & 29-32 under 35 USC §112 and the rejection of claims 11 & 22 under 35 USC §102 have been fully considered and are persuasive. The rejection of claims 7-10, 18-21, & 29-32 under 35 USC §112 and the rejection of claims 11 & 22 under 35 USC §102 have been withdrawn.

2. Applicant's arguments (7/8/08 Remarks: page 13, line 14 - page 15, line 7; page 16, lines 21-25; and page 17, lines 1-6) with respect to the rejection of claims 1-3, 12-14, 23-25, & 36 under 35 USC §102 and the objection to claims 4-6, 15-17, 26-28, & 34 have been fully considered but they are not persuasive.

Re claim 1, Applicant argues (7/8/08 Remarks: page 13, line 14 - page 15, line 7) that the art of record (He et al) does not disclose the claimed element of controlling dot cluster size based on a pixel value (pixel intensity).

However, He et al discloses (column 7, lines 23-28) that the described dot size modulation may be performed by grouping clusters of dots together.

The dot size modulation, however, may also depend on the particular application, i.e., printing system, and may be any one of a number of known methods which vary the size of a printed dot either by grouping clusters of dots together, including clustered dot digital halftoning.

The grouping of clusters of dots together *in order to perform a dot size modulation and thereby vary the size of the printed dot* as stated above necessarily requires that this grouping operation controls a dot cluster size.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-3, 12-14, 23-25, & 36 are rejected under 35 U.S.C. 102(e) as being anticipated by He et al (US 7031025).

Re claims 1, 23, & 36, He discloses (column 5, lines 27-53) a halftone generation method and apparatus that modulates dot density and dot size in accordance with obtained density and dot size factors and also (column 7, lines 16-28, particularly lines 25-28) modulates cluster size (by grouping clusters into larger clusters) in order to translate an original pixel intensity into a halftone representation based on original pixel intensity.

Re claim 12, He discloses (Figure 4; column 5, lines 6-9) the implementation of this method and apparatus under the

control of a computer (which necessarily follows instructions contained in a computer-readable medium).

Re claims 2, 13, & 24, He et al discloses (Figure 5; column 5, line 54 – column 6, line 6) the implementation of error diffusion in order to distribute pixel intensity errors as part of the modulation of dot density.

Re claim 3, 14, & 25, He et al discloses (Figure 5; column 5, line 54 – column 6, line 6) that the above described implementation of error diffusion in order to distribute pixel intensity errors as part of the modulation of dot density makes use of a look-up table to acquire a dot density factor.

Allowable Subject Matter

5. Claims 11, 22, 33, & 35 are allowed.
6. Claims 4-10, 15-21, 26-32, & 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter:

Re claims 4, 15, & 26 (and dependent claims 5, 16, & 27), the art of record does not teach or suggest the recited control of a dot cluster size comprising calculation of a threshold value as a function of a dot screen and a cluster value and

Art Unit: 2625

modulation of the dot density in a way that comprises incorporating an error diffusion algorithm in conjunction with the recited halftone process that modulates dot density, controls dot cluster size, and modulates dot size.

Re claims 6-7, 17-18, & 28-29 (and dependent claims 8-10, 19-21, & 30-32), insofar as claims 7-10, 18-21, & 29-32 are understood, the art of record does not teach or suggest the recited generation of a dot placement indicator used in dot size modulation in conjunction with the recited halftone printing as a function of a cluster factor, a dot density factor, and a dot size factor.

Re claims 11 & 22, as noted above, Applicant's arguments with respect to the rejection of claims 11 & 22 under 35 USC §102 have been fully considered and are persuasive.

Re claims 33 & 35, the art of record does not teach or suggest the recited placement control operable to calculate a threshold value as a function of the recited dot screen and cluster factors, and implement error diffusion as a function of the recited dot density factor, in conjunction with the recited halftone printing as a function of a cluster factor, a dot density factor, and a dot size factor.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning the contents of this communication or earlier communications from the examiner should be directed to Stephen M. Brinich at 571-272-7430.

Any inquiry relating to the status of this application, entry of papers into this application, or other any inquiries of a general nature concerning application processing should be

Art Unit: 2625

directed to the Tech Center 2600 Customer Service center at 571-272-2600 or to the USPTO Contact Center at 800-786-9199 or 571-272-1000.

The examiner can normally be reached on weekdays 8:00-5:30, alternate Fridays off.

If attempts to contact the examiner and the Customer Service Center are unsuccessful, supervisor David Moore can be contacted at 571-272-7437.

Faxes pertaining to this application should be directed to the Tech Center 2600 official fax number, which is 571-273-8300.

Hand-carried correspondence may be delivered to the Customer Service Window, located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

/S. M. B./

Examiner, Art Unit 2625

/Thomas D Lee/

Primary Examiner, Art Unit 2625